

# *MS Mechanical Engineering*

<http://www.nps.navy.mil/me/>

## **570 Curriculum**



- **Unique and relevant content.**
- **Fully accredited degrees.**
- **Many opportunities:**
  - **Diverse specialization tracks.**
  - **JPME**



- **Sandra Day:**
  - Ed Tech: Recordkeeping, general assistance.
- **CDR Cunningham:**
  - Program Officer: P-code and degree requirements, general (academic/career) advice.
- **Prof. Papoulias:**
  - Academic Advisor: Degree requirements, general (academic) advice.
- **Prof. Healey:**
  - Chairman: Final word.



Quarter	To Do
1	<ul style="list-style-type: none"><li>•BSME/MSME.</li><li>•Decide on your matrix (TSSE?).</li></ul>
2	
3	Start talking to faculty about your thesis.
4	Pick a thesis advisor, specialization area, and schedule your electives.
5	
6	<ul style="list-style-type: none"><li>•Fill out the thesis approval form.</li><li>•Start working on your thesis.</li></ul>
7	<ul style="list-style-type: none"><li>•Thesis slots (maybe earlier).</li><li>•Fill out final versions of BSME/MSME.</li></ul>
8	<ul style="list-style-type: none"><li>•Final revisions of BSME/MSME forms.</li></ul>
After...	Keep in touch!



- **ME is accredited at the MS level.**
- **Non-BSME students must completely fill out the BSME equivalency form.**
- **All students must fill out BSME and the MSME forms.**
- **Do it early, let me see it and file with Sandra.**
- **Revise them often.**
- **Final forms must be in your file prior to graduation.**



- **Three electives (4xxx); two must be from a specialization track.**
- **Available tracks:**
  - **Dynamic Systems and Control:** Healey, Papoulias, Ross, Kaminer, Driels (Weaponengineering).
  - **Structural Mechanics:** Shin, Gordis, Agrawal.
  - **Fluid/Thermo:** Millsaps, Gopinath, Kelleher, Sarpkaya, Shreeve, Hobson.
  - **Materials Science:** McNelley, Dutta.
  - **Ship Systems:** Papoulias, Calvano.
- **Decide early:**
  - **Electives are offered once a year.**
  - **Track is in support of thesis work.**



- **What is a thesis?**
- **What is a thesis advisor?**
- **Who can serve as a thesis advisor?**
- **When do I start the thesis?**
- **How long does the thesis require?**
- **How many thesis slots?**
- **Can I take additional thesis slots?**
- **Can I do a joint thesis?**
- **Can I combine thesis with courses?**
- **How do I select a thesis topic/advisor?**
- **Is there any funding required or received?**
- **Are there any resources available?**



1	<b>EC1010</b> Introduction to MATLAB	<b>MA1118</b> Multi-Variable Calculus	<b>ME0952</b> Special Topics	<b>ME2101</b> Thermodynamics	<b>ME2503</b> Statics and Dynamics	<b>NW3230</b> Joint Strategic Planning
2	<b>MA1042</b> Matrix Algebra	<b>MA2139</b> Differential Equations	<b>ME0952</b> Special Topics	<b>ME2601</b> Solid Mechanics I	<b>MS2201</b> Materials Science	<b>OS3104</b> Statistics
3	<b>MA3132</b> Partial Differential Equations	<b>MA3232</b> Numerical Analysis	<b>ME0952</b> Special Topics	<b>ME2201</b> Fluid Mechanics I	<b>ME3611</b> Solid Mechanics II	
4	<b>EO2102</b> Circuit and Power System Analysis	<b>ME0952</b> Special Topics	<b>ME3150</b> Heat Transfer	<b>ME3201</b> Applied Fluid Mechanics	<b>ME3521</b> Mechanical Vibrations	
5	<b>ME0952</b> Special Topics	<b>ME2801</b> System Dynamics	<b>ME3450</b> Computational Methods	<b>ME3711</b> Machine Design	<b>MS3202</b> Failure Analysis	
6	<b>ME0952</b> Special Topics	<b>ME3240</b> Marine Power and Propulsion	<b>ME3712</b> Systems Design	<b>ME3801</b> Automatic Controls	<b>ME4xxx</b> Elective	
7	<b>ME0810</b> Thesis Research	<b>ME0810</b> Thesis Research	<b>ME0952</b> Special Topics	<b>MS3606</b> Welding	<b>ME4xxx</b> Elective	
8	<b>ME0810</b> Thesis Research	<b>ME0810</b> Thesis Research	<b>ME0952</b> Special Topics	<b>TS3001</b> Naval Architecture	<b>ME4xxx</b> Elective	



- **Option (specialization area).**
- **Focuses on Total warship design.**
- **Open to ME, ECE, Physics, SEA students.**
- **Not a separate degree but a P-code designation.**
- **Decide early if TSSE is for you.**
- **More info at [www.nps.navy.mil/tsse/](http://www.nps.navy.mil/tsse/)**



# Typical TSSE Matrix

F	<b>ME2503</b> Statics and Dynamics	<b>MA2121</b> Differential Equations	<b>ME2101</b> Thermodynamics	<b>TS3000</b> Electrical Power	<b>MA2043</b> Linear Algebra
W	<b>MS2201</b> Materials Science	<b>TS3001</b> Naval Architecture	<b>TS3002</b> Ship Design	<b>TS3003</b> Combat Systems I	
Sp	<b>ME2201</b> Fluids I	<b>ME2801</b> System Dynamics	<b>TS4000</b> Combat Systems II	<b>TS4001</b> Ship Systems Integration	<b>MA3132</b> PDEs
Su	<b>ME3801</b> Automatic Controls	<b>ME3521</b> Mechanical Vibrations	<b>ME2601</b> Solids I	<b>TS4002</b> TSSE Design Project	
F	<b>ME3611</b> Solids II	<b>MS3202</b> Failure Analysis	<b>MA3232</b> Numerical Analysis	<b>TS4003</b> TSSE Design Project	
W	<b>ME3150</b> Heat Transfer	<b>ME3201</b> Fluids II	<b>OS3104</b> Probability	<b>ME0810</b> Thesis	
Sp	<b>MS3304</b> Corrosion	<b>ME3450</b> Computational Methods	<b>ME3711</b> Machine Design	<b>ME0810</b> Thesis	
Su	<b>NW3230</b> Strategic Planning	<b>ME4xxx</b> Elective	<b>ME0810</b> Thesis	<b>ME0810</b> Thesis	



- **PYTHON – you will be using it.**
- **MATLAB**
- **Technical writing.**
- **Technical presentation skills.**

